

REMARKS

Prior to entry of this amendment, claims 1-24 are currently pending in the subject application.

On December 20, 2004, the Examiner issued a Restriction Requirement in which the applicants were required to elect between Group I (claims 1-11) and Group II (claims 12-14). In response, applicants elected Group I, claims 1-11, for prosecution in the subject application. As a result, the Examiner withdrew claims 12-24 from consideration. By the instant amendment, withdrawn claims 12-24 are cancelled without prejudice or disclaimer. Applicants reserve the right to file a divisional application covering the subject matter of the non-elected claims, including the subject matter thereof as originally presented at the time the application was filed.

In addition, by the instant amendment, claims 1, 3-7, 9 and 10 are amended, claims 2 and 8 are cancelled, and claims 25-36 are added.

Claims 1-11 and 25-36 are presented to the Examiner for further or initial prosecution on the merits. Claims 1 and 5 are independent.

A. Introduction

In the outstanding Office action, the Examiner rejected claims 1 and 5-8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,521,494 to Matsui et al. ("the Matsui et al. reference"); rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Matsui et al. reference in view of U.S. Patent Application Publication No. 2001/00544730 to Kim et al. ("the Kim et al. reference"); rejected claims 1 and 5-8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0072191 to Aoki et al. ("the Aoki et al. reference"); and rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Aoki et al. reference in view of the Kim et al. reference.

B. Asserted Anticipation Rejection of Claims 1 and 5-8

In the outstanding Office action, the Examiner rejected claims 1 and 5-8 under 35 U.S.C. § 102(b) as being anticipated by the Matsui et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

By the instant amendment, claim 1 is amended to more particularly recite aspects of the capacitor, and to further incorporate the subject matter of claim 2, which is now cancelled. No new matter is added. Support for this amendment can be found in the application as originally filed at, e.g., drawing FIG. 6, and paragraphs [0046], [0047] and [0051]-[0057].¹

Applicants respectfully submit that the applied prior art fails to disclose or suggest each and every element of claim 1. For example, the Matsui et al. reference fails to teach a diffusion barrier layer as recited in claim 1, fails to teach a diffusion barrier layer that is arranged with respect to a lower electrode in the manner recited in claim 1, and fails to teach a lower electrode second metal layer having a greater reactivity towards oxygen than the diffusion barrier layer, as recited in claim 1. Accordingly, claim 1 is allowable over the applied prior art.

Claim 5 has been amended in similar fashion to claim 1, further incorporating the subject matter of claim 8, which is now cancelled. Applicants respectfully submit that claim 5 is allowable for at least the reasons that claim 1 is allowable, and claims 6 and 7 are allowable at least because of their dependency from claim 5.

In addition, with respect to claims 6 and 7, applicants respectfully submit that the Examiner failed to set forth a *prima facie* case of anticipation because the Examiner relied on a combination of references, viz., the Aoki et al. and Matsui et al. references, rather than a single reference as required by 35 U.S.C. § 102(b).²

¹ References to paragraph numbers are made with respect to the published application, 2004/0235260 A1.

² See the Office action mailed July 12, 2007, at page 4.

In view of the above, applicants respectfully request that this rejection be reconsidered and withdrawn.

C. Asserted Obviousness Rejection of Claims 2-4 and 9-11

In the outstanding Office action, the Examiner rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Matsui et al. reference in view of the Kim et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

As discussed above, independent claims 1 and 5 are allowable over the Matsui et al. reference, and claim 2 is cancelled. Claims 3, 4 and 9-11 depend from claims 1 and 5, respectively. Applicants respectfully submit that the Kim et al. reference fails to provide the teachings noted above as missing from the Matsui et al. reference. Accordingly, claims 3, 4 and 9-11 are allowable for at least the reasons that their respective base claims are allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

D. Asserted Obviousness Rejection of Claims 1 and 5-8

In the outstanding Office action, the Examiner rejected claims 1 and 5-8 under 35 U.S.C. § 103(a) as being unpatentable over the Aoki et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

By the instant amendment, claim 1 is amended to more particularly recite aspects of the capacitor and to further incorporate the subject matter of claim 2, as set forth above. Applicants respectfully submit that the applied prior art fails to disclose or suggest each and every element of claim 1. For example, the Aoki et al. reference fails to suggest a diffusion barrier layer as recited in claim 1, fails to suggest a diffusion barrier layer that is arranged with respect to a lower electrode in the manner recited in claim 1, and fails to suggest a lower electrode second metal layer having a greater reactivity towards oxygen than the diffusion barrier layer, as recited in claim 1. Accordingly, claim 1 is allowable over the applied prior art.

Claim 5 has been amended in similar fashion to claim 1, further incorporating the subject matter of claim 8. Applicants respectfully submit that claim 5 is allowable for at least the reasons that claim 1 is allowable, and claims 6 and 7 are allowable at least because of their dependency from claim 5.

In view of the above, applicants respectfully request that this rejection be reconsidered and withdrawn.

E. Asserted Obviousness Rejection of Claims 2-4 and 9-11

In the outstanding Office action, the Examiner rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Aoki et al. reference in view of the Kim et al. reference. This rejection is respectfully traversed for at least the reasons set forth below.

As discussed above, independent claims 1 and 5 are allowable over the Aoki et al. reference, and claim 2 is cancelled. Claims 3, 4 and 9-11 depend from claims 1 and 5, respectively. Applicants respectfully submit that the Kim et al. reference fails to provide the teachings noted above as missing from the Aoki et al. reference. Accordingly, claims 3, 4 and 9-11 are allowable for at least the reasons that their respective base claims are allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

F. New Claims

By the instant amendment, claims 25-36 are added. No new matter is added. Support for claims 25-36 can be found in the application as originally filed at, e.g., drawing FIG. 6, and paragraphs [0046], [0047] and [0051]-[0057]. Applicants respectfully request entry and examination of claims 25-36.

G. Conclusion

The above remarks demonstrate the failings of the Examiner's arguments with respect to the outstanding rejections, and are sufficient to overcome them. However, while these remarks may refer to particular claim elements, they are not intended to, nor need they, comprehensively address each and every reason for the patentability of the claimed subject

matter over the applied art. Accordingly, applicants respectfully submit that the claims are allowable for reasons including, but not limited to, those set forth above, and patentability of the claims does not depend solely on the particular claim elements discussed above.

The remaining documents cited by the Examiner were not relied on to reject the claims. Therefore, no comments concerning these documents are considered necessary at this time.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

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PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.